

1. A composition suitable for manufacturing and molding a golf ball cover comprising:
 - (a) a polyurethane prepolymer comprising:
 - (1) a diisocyanate; and,
 - (2) a polyol; and,
 - (b) a curing agent comprising:
 - (1) a slow-reacting diamine; and,
 - (2) a fast-reacting diamine.
2. The composition of claim 1 wherein the diisocyanate is selected from the group consisting of toluene diisocyanate, 4,4'-diphenylmethane diisocyanate, Isophorone diisocyanate and any mixtures thereof.
3. The composition of claim 1 wherein the polyol is an ether glycol.
4. The composition of claim 1 wherein the polyol is polytetramethylene glycol.
5. The composition of claim 1 wherein the curing agent comprises a slow-reacting diamine with diethyl-2,4-toluenediamine.
6. The composition of claim 1 wherein the curing agent comprises dimethylthio-2,4-toluenediamine and a fast-

reacting diamine.

7. The composition of claim 1 wherein the curing agent comprises a blend of dimethylthio-2,4-toluenediamine and diethyl-2,4-toluenediamine.
8. A composition suitable for manufacturing and molding a golf ball cover comprising:
 - (a) a polyurethane prepolymer comprising:
 - (1) a diisocyanate; and,
 - (2) a polyol; and,
 - (b) a curing agent comprising:
 - (1) dimethylthio-2,4-toluenediamine; and,
 - (2) diethyl-2,4-toluenediamine.
9. The composition of claim 8 wherein the diisocyanate is selected from the group consisting of toluene diisocyanate, 4,4'-diphenylmethane diisocyanate, Isophorone diisocyanate and mixtures thereof.
10. The composition of claim 8 wherein the polyol is an ether glycol.
11. The composition of claim 8 wherein the polyol is tetramethylene ether glycol.

12. A method of making a golf ball comprising:

providing a prepolymer comprised of a diisocyanate and a polyol and heating the prepolymer;

providing a curative comprised of a slow-reacting diamine and a fast-reacting diamine at room temperature;

mixing the prepolymer with the curative in a mixer to create a polymer mixture;

pouring the polymer mixture into a first mold half and allowing the mixture to reach a semi-gelled state;

lowering a golf ball core into the first mold half such that the golf ball core is suspended in the semi-gelled polymer mixture;

pouring the polymer mixture into a second mold half and allowing the mixture to reach a semi-gelled state;

inverting the first mold half and mating it to the second mold half;

heating the mated first and second mold halves containing the polymer mixture and golf ball core;

cooling the mated first and second mold halves containing the polymer mixture and golf ball core; and,

removing the molded golf ball from the first and second mold halves and allowing the golf ball to cure.

13. The method according to claim 12 wherein the prepolymer is heated to about 140°F.

14. The method according to claim 13 wherein the first and second mold halves are heated to about 160°F.

15. The method according to claim 14 wherein the polymer mixture is allowed to cure for approximately 35 seconds after being poured into the first mold half.

16. The method according to claim 15 wherein the polymer mixture is allowed to cure for approximately 20 to 30 seconds after being poured into the second mold half and before inverting and mating the first mold half with the second mold half.

17. The method according to claim 16 wherein the mated first and second mold halves are heated for approximately 4 minutes and cooled for approximately three minutes.

18. The method according to claim 17 wherein the molded golf ball is allowed to cure at room temperature for about between 8 to 16 hours.

19. The method according to claim 12 including the step of adding a pigment to the polymer mixture in the mixer.

20. The method according to claim 19 wherein the pigment comprises .25 to 5% by weight of the total polymer mixture.